

**IOCTL\_DFN\_MAP\_BUFFER**

Returns an address for the image buffer specified in the current sequence.

**IOCTL\_DFN\_UNMAP\_BUFFER**

5 Unmaps the specified image buffer in the current sequence.

**IOCTL\_DFN\_DELETE\_ALL\_SEQUENCES**

Deletes all sequences allocated by the driver.

**IOCTL\_DFN\_SET\_DETECTOR\_WORDSAP**

Forces pixel word swapping on a sequence regardless of the default.

10 **IOCTL\_DFN\_CLR\_DETECTOR\_WORDSAP**

Forces no pixel word swapping on a sequence regardless of the default.

**IOCTL\_DFN\_RESET**

Resets the DFN board firmware.

**IOCTL\_DFN\_RESET\_FC**

15 Resets the Fiber Channel hardware.

**IOCTL\_DFN\_GET\_VERSION\_INFO**

Returns DFN 304 version and S/N, as well as firmware revision numbers for EP 374 and DAP 372.

**IOCTL\_DFN\_GET\_EAB\_MEM\_SIZES**

Returns the size of EAB memory and of the individual queue areas within it.

#### IOCTL\_DFN\_WRITE\_EAB\_MEMORY

Data can be written to EAB memory 474 with this command.

#### 5 IOCTL\_DFN\_READ\_EAB\_MEMORY

Data can be read from the EAB memory on EP 374 with this command.

#### IOCTL\_DFN\_PROGRAM\_DFN\_CARD

10 Programs EAB memory 474 with code from the user generated COFF file.

#### IOCTL\_DFN\_VERIFY\_DFN\_CARD\_PROGRAM

Returns the code in EAB memory 474 that was programmed previously.

#### IOCTL\_DFN\_GET\_GEN\_DATA\_CFG

15 Returns configuration settings for the Test Image Generator circuit on DFN 304.

#### IOCTL\_DFN\_SET\_GEN\_DATA\_CFG

Sets specified configuration settings for the Test Image Generator on DFN 304.

#### 20 IOCTL\_DFN\_BEGIN\_ACQ\_SEQUENCE

Starts the event queue and begins data acquisition.

#### IOCTL\_DFN\_ABORT\_SEQUENCE

Stops the currently running DFN acquisition before an EndQ is received.

#### IOCTL\_DFN\_SET\_AUTOSCRUB\_DELAY

5      Sets the delay between consecutive autoscrub requests in 2  $\mu$ sec clock ticks.

#### IOCTL\_DFN\_GET\_AUTOSCRUB\_DELAY

Returns the delay between consecutive autoscrub requests in 2  $\mu$ sec clock ticks.

#### IOCTL\_DFN\_ENABLE\_AUTOSCRUB

10      Turns on the autoscrub circuit on DFN 304.

#### IOCTL\_DFN\_DISABLE\_AUTOSCRUB

Turns off the autoscrub circuit on DFN 304.

#### IOCTL\_DFN\_CONFIG\_RTБ

15      Sets the default state and driver direction for the real time bus on DFN 304.

#### IOCTL\_DFN\_READ\_RTБ

Returns the current state of the real time bus lines including the default and direction settings.

#### IOCTL\_DFN\_WRITE\_RTБ

20      Writes data to the real time bus 379 in the State/Mask format used by the Event Queue.

**IOCTL\_DFN\_GET\_MODE**

Returns the current state (Normal, Run, Diagnostic) of EP state machine.

**IOCTL\_DFN\_SET\_MODE**

5 Sets the current state (Normal, Run, Diagnostic) of EP state machine.

**IOCTL\_DFN\_GET\_HOST\_FLAGS**

Reads host flags from the event queue.

**IOCTL\_DFN\_SET\_WAIT\_HOST\_FLAG**

Block while waiting for the specified Host Flag from the event queue.

10 **IOCTL\_DFN\_CLR\_ALL\_HOST\_FLAGS**

Clears any outstanding Host Flags or Host Flag requests.

**IOCTL\_DFN\_ACCESS\_LOCAL\_BUS**

Read or write the DFN local bus is while the card is in Diagnostic mode.

15 **IOCTL\_DFN\_SEND\_DETECTOR\_CMD**

Send commands directly to the detector while in Diagnostic mode.

**IOCTL\_DFN\_SEND\_DFN\_CMD**

Bypass the driver to Execute a DFN command directly in Diagnostic mode.

20 **IOCTL\_DFN\_SET\_TRACE\_LEVEL**

Sets the debug trace level which controls printing of trace messages by the kernel debugger.

#### IOCTL\_DFN\_GET\_TRACE\_LEVEL

5 Returns the debug trace level controlling printing of trace messages by the kernel debugger.

#### IOCTL\_DFN\_BUGCHECK

Force a system crash in order to generate a crash dump for analysis.

#### IOCTL\_DFN\_SET\_BREAK\_FLAG

Causes driver checked version to break on entry to every function.

10 IOCTL\_DFN\_CLEAR\_BREAK\_FLAG

Causes driver checked version to NOT break on entry to every function.

#### IOCTL\_DFN\_DUMP\_HEAP\_LIST

15 Dumps information of free memory heap and sequence memory usage to an output file.

#### IOCTL\_DFN\_SET\_\_LEDS

Turns DFN LEDs on or off independently according to the specified state.

#### IOCTL\_DFN\_GET\_BASE\_ADDRESSES

20 Returns kernel virtual addresses so user application can access DFN memory space directly.

#### IOCTL\_DFN\_FREE\_BASE\_ADDRESSES

Releases the specified kernel virtual addresses.

IOCTL\_DFN\_DUMP\_DFN\_MEMORY

Writes a section of DFN memory to a file.

IOCTL\_DFN\_MAP\_PHYS\_ADDR

- 5 Maps a physical address to a user virtual address; used to access RAM above MAXMEM.

IOCTL\_DFN\_UNMAP\_PHYS\_ADDR

Release the specified user virtual address.

IOCTL\_DFN\_READ\_DFN\_ADDR

- 10 Attempts to read the DFN board at the offset given in the input argument.

IOCTL\_DFN\_WRITE\_DFN\_ADDR

Attempts to write a value to the DFN board at the offset given in the input argument.

- 15 IOCTL\_DFN\_GET\_FC\_LOOPBACK

Returns the state of Fiber Channel loopback; 0=loopback disabled, 1=loopback enabled.

IOCTL\_DFN\_SET\_FC\_LOOPBACK

- 20 Enables or disables Fiber Channel loopback; 0=loopback disabled, 1=loopback enabled.

As this invention may be embodied in several forms without departing from the spirit or principal characteristics thereof, the present embodiments are

therefore illustrative and not restrictive. Those skilled in the art will appreciate that changes may be made to these embodiments without departing from the principles and spirit of the invention. Accordingly, the scope of the invention is defined by the appended claims rather than by the description preceding them, and all changes that

5 fall within the metes and bounds of the claims, or equivalents of such metes and bounds thereof, are therefore intended to be embraced by the claims.